Mad Roaring Mills: Botany Effects Analysis

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Introduction

This analysis will focus on two issues 1) on the effects of the proposed road and fuels treatments on native plant communities (including the species of local interest *Iliamna longisepala*), 2) on the establishment and spread of invasive plants. This section incorporates by reference and supplements the botany biological evaluation, and the invasive plant risk assessment found in the project analysis file.

All proposed actions, except for the roads that will be closed as part of a GIS mapping exercise and require no ground treatment, are analyzed.

Resource Indicators and Measures

Table 1: Resource indicators and measures for assessing effects

Resource Element	Resource Indicator	Measure (Quantify if possible)	Used to address: P/N, or key issue?	Source (LRMP S/G; law or policy, BMPs, etc.)?
Native plant communities, ILLO	Habitat for native plant communities	Acres of road converted to plant habitat. Number of stream crossings eliminated.	Yes	WFP, NWFP Endangered Species Act
Invasive plant risk - vectors/spread	Soil disturbance, bare soil conditions	Miles of road Acres of mechanized thinning Acres of prescribed burning Acres of thin/pile/burn Miles of motorized trail	Yes	R6PNW Invasive plant ROD Invasive Species Executive Order 13112 Washington State Noxious Weed Law

Methodology

The number of acres of native plant habitat improved due to road decommissioning is calculated by multiplying the length of the road segment by 25 feet in width (to include the road surface and immediate ditch and cutbanks). The acres of habitat improvement resulting from repairing stream crossings (culvert removal) differ depending by the topography and length of road within the riparian area. Stream crossings are described using number of crossings.

The invasive plant risk analysis was based on known populations in FS databases and additional populations found during filed surveys, and the life history of the individual plants.

Information Sources

The Forest Service NRIS database, the Washington State heritage program database, the Chelan County Noxious Weed program, field survey forms, and GPS data were consulted for Threatened, Endangered, and Sensitive plant, and invasive plant, occurrence, and locations.

Incomplete and Unavailable Information

The long-term effects of prescribed burning in the spring on native plant communities and associated pollinators are not completely known. The assumption is made that one prescribed burn in the spring is not likely to have long term negative effects because burns are relatively small and pollinators and native plants that were killed during spring green up could eventually recolonize from surrounding areas. However, repeated spring burns could potentially affect the composition of the plant community and pollinator/plant timing and this would need to be considered in future prescribed burn projects in the watershed.

Environmental Consequences

Existing Condition

The project area includes grassland/shrub steppe, dry ponderosa pine and Douglas fir forest, mesic mixed-conifer forest with Douglas fir, grand fir, western white pine and lodgepole pine, subalpine forest with lodgepole pine, Engelmann spruce, subalpine fir, and white bark pine, riparian areas dominated by black cottonwood and western red cedar, and small wetlands and seeps that are dominated by aspen, red osier dogwood and other hardwood shrubs, and forbs. A total of 196 species of vascular plants were recorded during surveys in the project area. The condition of the native plant communities within these forest types varies. Generally, the lowest elevation and driest communities are most impacted by invasive plants and the riparian areas, seeps, and springs have the greatest biodiversity. Parts of the project were burned in the 2014 Mills Canyon Fire and the 2018 Cougar Creek fire.

Native plant communities and sensitive plants

Native plant communities, including the sensitive plant *Iliamna longisepala* (long-sepal globemallow, Ranne 2021), in the project area were impacted by past management activities including timber harvest, wildfire suppression, thinning, prescribed burning, salvage logging, road building, sheep grazing and recreation. These activities resulted in the complete removal of native plant habitat (roads), and ground disturbance which removed native plant cover and created conditions favorable to infestation by invasive plants (logging, fire line construction, thinning, pile burning, sheep grazing). As a result of fire suppression dry forests became denser with small conifers than they would be under natural fire regimes, and the native plant community composition on the forest floor was altered (only the most shade tolerant species can persist in the very dense conifer forests). Sheep grazing reduced cover of native plants and the sheep are vectors for invasive plant seed dispersal. The designated bedding grounds for the sheep are the most infested areas in the project area. Roads, in addition to removing habitat, also interrupt the flow of ground water from the hillsides into the streams, reducing habitat for those native plants that are dependent on the transitional areas between upland and riparian habitat. Roads that are near streams, and cross streams, reduce riparian habitat, which is important for the biodiversity of the watershed

Invasive plants

All roads in the project area are infested with least one invasive plant that is a WA state listed Class B or C noxious weed. There are 3 Class B noxious weeds designated for control in Chelan County that occur

in the project area: Dalmatian toadflax, spotted knapweed, and diffuse knapweed and two Class C designated for control (Canada thistle and common St. John's wort). In addition to those state listed noxious weeds many non-native invasive species are found in the project area – cheatgrass, smooth brome, bulbous bluegrass, tumble mustard, yellow salsify, woolly mullein, shepherd's purse, horseweed, dandelion, orchard grass, sweet clover, stinking chamomile, western white clematis, red clover, disc mayweed, timothy, prickly lettuce, sheep sorrel, and alfalfa.

Management Direction

Desired Condition

The National Forest Management Act (NFMA) and regulations, and Forest Service policy require the agency to maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands.

The Endangered Species Act (ESA) requires that the Forest Service conserve endangered and threatened species. The sensitive species program was developed to ensure that species do not become threatened or endangered because of Forest Service actions. As part of the NEPA process the Forest Service is required to review programs and activities through biological evaluation, to determine their potential effect on sensitive species. Management "…must not result in the loss of species viability or create significant trends toward Federal listing" (FSM 2670.5). A viable population "…has the estimated numbers and distribution of reproductive individuals to ensure the continued existences of the species throughout its existing range within the planning area" (FSM 2670.5) The Region 6 Sensitive Species list was last updated in 2015.

The Wenatchee Forest Plan Standards and Guidelines (IV-104) give direction "to maintain or enhance biological diversity by providing or developing an ecologically sound distribution and abundance of plant and animal communities and species at the forest stand, subdrainage, and Forest level. This distribution must contribute to the goal of "maintaining or enhancing all native and desirable introduced species and communities". The most critical components of diversity are identified as old growth, and wildlife and plant habitat for rare species.

The NWFP directs that Riparian Reserves be used to …enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas and improve travel and dispersal corridors for many terrestrial plants and animals.

Environmental Consequences

Direct and Indirect Effects of No Action

Native plant communities, Invasive plants

With no action no roads would be closed, and no native plant habitat would be restored. Invasive plants would persist and continue to spread on undriveable roads at an estimated rate of 8-12 % a year (USDA 2005). All 255.6 miles of road would continue to be habitat and vectors of spread for invasive plants.

In the long term, and without any wildfires that escape fire suppression, fuel accumulation on the forest floor would eventually exceed natural ranges of fuels for those forest types, and soil damage would be more likely to occur when they do burn. Damaged soils take longer to revegetate and are therefore vulnerable to invasive plant infestation for a longer period. There could be long term negative effect to native plant habitat if invasive plants dominate the growing space. Invasive plants like diffuse knapweed are allelopathic (they secrete chemicals from their roots which prevent other plants from growing). Sites dominated by diffuse knapweed are unlikely to recover on their own.

No thinning or burning would occur on the proposed units. However, adjacent areas would be treated as part of other projects (Tillicum, East Pine Zone) and some units were recently burned in the Mills Canyon Fire (2014) and the Cougar Creek fire (2018) . Without fuels treatments there would be no direct effects from those activities. However, in the absence of fuels treatments some stands would be denser than they would have been before effective fire suppression began (1950s). As forest stands and openings become denser, the species composition of the understory would shift to primarily shade-tolerant species. The overall biodiversity of the watershed would be expected to decrease as the open habitats are reduced.

Direct and Indirect Effects of the Proposed Action

Table 2: Resource indicators and measures for no action and the Proposed Action

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Existing Condition (No Action)	Proposed Action
Native plant Communities	Roads	Miles of roads, campsites, Number of stream crossings restored	255.6 miles 0	182.3 7
Risk of spread of invasive plants	Roads in the project area	Miles of rd. Acres of mechanized thinning Acres of Prescribed fire Acres of thin/pile/burn Miles of motorized trail	255.6 miles 0 0 0 0	182.3 miles 167 acres 8,133 acres 10,628 acres 9.4 miles

Native plant communities, Invasive plants

Under the Proposed Action 443 acres of roadbed and adjacent habitat would be restored to habitat for native plants. Seven culverts would be removed, allowing the restoration of riparian habitat. The conversion of roadbed to motorized trail would reduce the footprint of the road, but because it will still be traveled by motorized vehicles it will remain a vector for invasive plant spread. Design features requiring the treatment of invasive plants and ongoing monitoring and treatment will reduce the spread and establishment of invasive plants.

Non-commercial thinning would remove small trees, reducing the area shaded by conifers and opening more growing space for understory plants. This would likely result in an increase in biodiversity as more shade intolerant plants are able to move into the units. This could also favor the establishment of invasive plants, which have a competitive advantage in early seral (unshaded) conditions. Design features requiring that any invasive plant populations in or adjacent to the unit be treated prior to implementation, and that monitored for 3 years after implementation will help prevent the spread of invasive plants into the thinned areas.

The 167 acres that would be thinned using machines would be more vulnerable to invasive plan invasion due to the increase in ground disturbance from the machine travel. In addition, native plants under the machine constructed piles would be killed when those piles are burned, and there would be a short-to mid-term (5-10 year) reduction of plant cover on the pile scar. The burn pile scars would be vulnerable to invasion by invasive plants. Multiple design features (in both the soils and botany section) are included to mitigate the effects of machine thinning.

Burning of hand-constructed piles would result in mortality of any plants underneath the piles, and a short-term (3-5 year) reduction of plant cover on the pile scar. Native plants should eventually re-colonize the scar but until they do the scars would be more susceptible to infestation by invasive species. Piles burned in areas already infested with invasive plants would be most vulnerable. Establishment of invasive plants in the pile scars could prevent the re-establishment of native species causing a long-term loss of native plant cover. Design features requiring an invasive plant prevention plan to be developed for each unit would reduce the risk of projective activities spreading invasive plants. For example, pile scars could be monitored for infestation, treated if necessary, and seeded with native grasses if the natives were not naturally recolonizing the scars. Design features requiring a 100 ft buffer from project activities for sensitive plants will protect those species from damage.

Under burning is more like wildfires than pile burning, however native plants are most adapted to dry season (summer) fires and all the prescribed burns under around 4,000 feet elevation are likely to take place in the spring. Wildfires typically occur when perennial native plants have already reproduced and are dormant, and annuals have already produced seed. Burning in the spring may directly affect some native plants that are actively growing, causing mortality or reduced vigor, and may interrupt the timing of pollinator - plant relationships reducing reproductive success. Because only a limited number of acres in the watershed are burned in each year (the District total is typically 1500 to 2000 acres, and that is spread between a few different project areas) there should remain adequate native plants within the project area to support the necessary pollinators. Under burning, because it reduces native plant cover, creates conditions favorable to invasive plant infestation. Those under burn units already infested with invasive plants would be most vulnerable to an increase in invasive plant cover after burning. This would indirectly affect native plant communities by reducing available habitat and increasing competition for resources. Design criteria requiring an invasive plant prevention plan to be developed for each unit would reduce the risk of projective activities spreading invasive plants.

Under burning reduces litter, needles, branches, and logs on the ground. Burns may be planned to target amounts and sizes of different fuels. Fuel loadings in the project area vary from light and within the lower part of the range of natural conditions to heavier loadings (but most are still in the range). Wood and litter on the forest floor contribute to the ecosystem through fertilization - through the slow decomposition of wood, and support substrates on which fungi, lichens, and mosses grow. Some litter and wood is necessary for a healthy ecosystem. In grassy open areas litter is primarily from grass and deciduous shrubs. Fuels on the ground also help to retain soil moisture. This project would strive to retain at least the minimum fuel loadings required in the Forest Plan, within the natural range for each vegetation type. In addition, the under burns would be designed to primarily reduce the smallest fuels

(less than 3-inch diameter) and leave the large wood logs on the ground. These smaller fuels take less time to be replaced, therefore the direct effects of reducing small fuels (reduced soil moisture, reduction in habitat for dependent plants, fungi, mosses, and lichens, reduced benefit from decomposition) would likely be short term (3-5 years).

Cumulative Effects of the Proposed Action

Spatial and Temporal Context for Effects Analysis

The spatial boundary for analyzing the cumulative effects to Botany and Invasive plants is the project area because this will be where the effects of this and other projects will overlap.

The temporal boundaries are the lifespan of the document plus an additional 5 years to estimate the length of time for native vegetation recovery after road work and pile burning (15 years total).

Short term effects to plants are within a single growing season (1 year). Long term effects are over more than one growing season up to 15 years.

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

The present and reasonably foreseeable activities that may affect native plant communities and invasive plants are sheep grazing, fire suppression, and road use.

Native Plant Communities, Invasive plants

Vegetation treatments which are ground disturbing or reduce cover of native plants in areas infested with invasive species and the short-term effects of road decommissioning could contribute to an adverse cumulative effect to native plant communities when combined with the effects of sheep grazing. Sheep grazing reduces native plant cover, reduces vigor of native plants, increases the potential for invasive plant establishment, and sheep are vectors for weeds by carrying seed in their coats. To reduce this potential for an adverse cumulative effect a design feature was developed to include the Range Technician in the development of the invasive plant prevention plan for each unit to coordinate the timing of sheep grazing with weed treatments and prevention measures and project activities.

The proposed vegetation treatments aim to mitigate some of the effects of past management – logging and fire suppression. By thinning small trees, the treatments will offset the effects of fire suppression, and thinning to promote tree growth will help to return the large tree component that was lost to logging, and wildfire. Native plant communities associated with open stands of large trees, and other open habitats, would benefit from these treatments provided invasive species are prevented from spreading.

Fire suppression likely reduced the distribution of sensitive native plants like long-sepal globemallow, which grows in open habitats and is stimulated by summer (hot season) fires (Ranne 2021). Prescribed burning may improve potential habitat for this species. Protection of known populations would preserve them as a source of seed. Vegetation treatments may help mitigate the effects of past fire suppression but expected continued suppression of natural season (summer) wildfires would likely adversely impact the plant. In summary, this project may offset some of the cumulative effects of past management but would not fully counter the expected effects of future fire suppression. Continued monitoring of these populations will be required (Ranne 2021).

Travel on roads spreads invasive plant seeds, and roads are habitat for invasive plants. The proposed action would reduce the number of roads in the project area. The decommissioned roads, once revegetated, would no longer be vectors for weed spread. This would mitigate some of the effects of past

actions and would therefore not contribute to a negative cumulative effect to upland and riparian native plant communities.

Consistency with Relevant Laws, Regulations, and Policy

Land and Resource Management Plan

Wenatchee National Forest Land and Resource Management Plan (Forest Plan)

The Wenatchee National Forest Plan was amended by the Northwest Forest Plan and the R6 Invasive Plant EIS (2005).

The Wenatchee Forest Plan has several Forest-wide Standards and Guidelines that apply to plants (pages IV-78, IV-89, IV-92):

- Threatened, endangered and sensitive species will be identified and managed in cooperation with the [USFWS, WDFW, DNR] and Washington Natural Heritage Program (plants) for all projects.
- All proposed projects that may involve significant habitat disturbances or changes or have the potential to alter habitat of [TES] plant…species, shall be inventoried to determine if any of these species are present.
- Biological evaluations that indicate an activity may have an impact on [TES] species should be reviewed with the state agency that is responsible for the species and recommendations considered in finalizing mitigation requirements for a project proposal.
- All Project Environmental Analyses will evaluate the effects of the project on [TES] species.
- Habitat for existing Federally classified threatened and endangered species shall be managed to achieve objectives of recovery plans.
- Where a threatened or endangered species or suitable habitat is present in a project area, follow the Biological Assessment Process and the Consultation Procedures.
- When sensitive species are present in a project area, follow the objectives in the Species Management Guide.
- [S]ensitive species will receive special management consideration under Forest Service policy. All necessary actions will be taken to assure that management activities do not jeopardize the continued existence of a sensitive species through adverse modifications of their essential habitat until their status is determined.
- Contain, control, or eradicate existing [weed] populations as budget allows. Give priority as follows: 1. Projects that are next to…threatened Federally listed threatened, endangered, and sensitive species.
- The Wenatchee Forest Plan Standards and Guidelines (IV-89) require that a noxious weed assessment be completed for all significant ground disturbing project activities to determine the risk of introducing noxious weeds and to develop and plan to prevent introduction on moderate and high-risk sites.
- The Wenatchee Forest Plan Standards and Guidelines (IV-104) give direction “to maintain or enhance biological diversity by providing or developing an ecologically sound distribution and abundance of plant and animal communities and species at the forest stand, subdrainage, and

> Forest level. This distribution must contribute to the goal of "maintaining or enhancing all native and desirable introduced species and communities". The most critical components of diversity are identified as old growth, and wildlife and plant habitat for rare species.

The proposed actions meet the direction for Sensitive plant management in the Wenatchee Forest Plan. The project area was surveyed for Sensitive plants in June 2021, none were located (Ranne 2021). Any Sensitive plant populations found during implementation will be protected from disturbance through design features. A noxious weed assessment was completed for this project and a plan was developed to prevent the introduction of weeds onto moderate and high-risk sites. This was achieved through design features requiring an invasive plant treatment plan (including treatment and prevention measures) to be a part of activities (burning, thinning, road work, motorized trail construction).

Northwest Forest Plan and Survey and Manage Species

All the project area lies within the range of the northern spotted owl and is managed under the Northwest Forest Plan which amended both plans in 1994. The Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (USDA 2001) contains direction for mitigating effects to certain species of vascular plants, bryophytes, lichens, and fungi within the Northwest Forest Plan lands. This project uses the January 2001 ROD standards and guidelines and the associated January 2001 species list.

Also applicable within the entire NWFP area is one of the main intents of the Northwest Forest Plan: to maintain a healthy forest ecosystem with habitat that will support populations of native species (R6 PNW ROD, p. A-1). The Northwest Forest Plan includes an Aquatic Conservation Strategy; the relevant objectives for botany in this project are to "8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands…" and "9. Maintain and restore habitat to support well-distributed populations of native plant…species."

In addition to the intents of the NWFP, Survey and Mange requirements and ACS requirements that apply throughout the NWFP area, two land allocations have allocation specific management direction for plants:

- In the LSR land allocation, non-native species (plant and animal) should generally not be introduced into LSRs. If proposed, an assessment of the impacts must be completed, and introduction must avoid retarding or preventing achievement of LSR objectives.
- Riparian Reserves are used to …enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas and improve travel and dispersal corridors for many terrestrial plants and animals.
- The NWFP gives Standards for coarse woody debris (which are critical for maintaining populations of fungi, mosses, lichens, and some vascular plants) in matrix stands (C-40).
- Coarse wood (large down logs) that are already on the ground need to be retained and protected from disturbance to the greatest extent possible.
- Manage to provide a renewable supply of large down logs well distributed across the matrix landscape.

There are four categories of projects exempt from the Survey and Manage standards and guidelines as stipulated by Judge Pechman (October 11, 2006, "Pechman exemptions"):

- Thinning projects in stands younger than 80 years old.
- Replacing culverts on roads that are in use and part of the road system and removing culverts if the road is temporary or to be decommissioned.
- Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement of large wood, channel and floodplain reconstruction, or removal of channel diversions; and
- The portions of projects involving hazardous fuel treatments where prescribed fire is applied. Any portions of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and manage requirements except for thinning of stands younger than 80 years old under subparagraph (a) of this paragraph.

All the activities in the Proposed Action except the motorized trail construction meet the Pechman exemptions. The motorized trail construction is not in old growth forest, therefore no survey and manage plant surveys were conducted.

The proposed action is consistent with Northwest Forest plan guidance to enhance and improve habitat riparian reserves through proposed decommissioning of roads in the riparian reserves. The proposed action will meet standards for coarse woody debris through design features to provide distribution of large logs across the landscape and limit the burning of larger logs.

R6 PNW Invasive Plant Management ROD (2005)

Both Forest Plans were amended in 2005 by the Region 6 Invasive Plant Management ROD (2005), which has several standards that apply to this project:

1. Prevention Standard 1 - requires that prevention of invasive plant introduction, establishment, and spread will be addressed in all plans (with existing condition, mechanisms for spread, prevention measures, and remaining risk addressed).
2. Prevention Standard 2 – requires cleaning of all heavy equipment prior to entering NFS lands.
3. Prevention Standard 3 - requires weed free straw and mulch for rehab.
4. Prevention Standard 8 – conduct road blading and ditch clearing in consultation with local weed specialist (time activity to reduce spread of seeds, etc.).
5. Treatment Restoration Standard 13 – use native plant materials in revegetation unless conditions warrant other choices.

12. Develop a long-term site strategy for restoring/revegetating invasive plant sites.

The applicable prevention and treatment restoration standards provided in the R6 PNW Invasive Plant Management ROD will be met. Prevention of invasive plant introduction, establishment and spread is addressed, cleaning of heaving equipment and use of weed free straw and mulch will be required, and the

timing of road work will be coordinated with the District invasive plant manager to reduce the spread of seeds.

Other Relevant Law, Regulation, or Policy

Federal Law

Endangered Species Act

The Endangered Species Act requires that the Forest Service conserve endangered and threatened species. There are two federally listed plant species found on the adjacent Wenatchee River Ranger District: *Hackelia venusta* and *Sidalcea oregana* var *calva*. Whitebark pine *Pinus albicualis* is proposed for listing.

There are no known threatened or endangered plants, or critical habitat, in the project area. If any are found during implementation they will be protected and the USFWS will be consulted. This project will have no effect to *Hackelia vensuta*, or *Sidalcea oregana* var. *calva* due to no habitat and no occurrence in the project area. Whitebark pine could occur at the highest elevations of the project area and will be protected wherever it occurs through design feature requiring that high elevation units be surveyed for white bark pine prior to implementation and that those trees be protected from project activities. This project is not likely to adversely affect white bark pine.

Executive Orders

Invasive Species, EO 13112 of February 3, 1999

Section 2 of this EO 13112 established duties for Federal Agencies whose actions may affect the status of an invasive species (to the extent practicable and permitted by law): to identify such actions, use relevant programs and authorities to prevent the spread of invasive species, detect, respond rapidly to and control populations of such species, monitor invasive species populations, provide for restoration of native species and habitat in ecosystems that have been invaded, and promote public education on invasive species.

In addition, Federal agencies may not authorize, fund, or carry out actions that it believes are likely to cause of promote the introduction or spread of invasive species unless the agency had determined and made public its determination that the benefits of such actions clearly outweigh the potential harm cause by invasive species and that all prudent and feasible measure to minimize the risk of harm will be taken in conjunction with the actions.

Federal agencies are directed to pursue the above duties in consultation with the Invasive Species Council and in cooperation with stakeholders, as appropriate.

This action would be consistent with guidance in EO 13112. An invasive plant prevention strategy will be developed for each road and treatment unit and will include all prudent and feasible measures to prevent the introduction and spread of invasive plants (treatment, timing, avoidance, monitoring, seeding with native grass seed).

State and Local Law

Noxious Weed

Washington State Noxious Weed law (RCW 17.10.140) requires landowners to control the spread of noxious weeds as required by weed class. There are 3 Class B noxious weeds designated for control in Chelan County that occur in the project area: Dalmatian toadflax, spotted knapweed, and diffuse knapweed and two Class C designated for control (Canada thistle and common St. John's wort). These known infestations will be treated before project activities and monitored and treated after implementation to prevent spread. Therefore, this project is consistent with Washington State Noxious Weed law.

Conclusion

The proposed action could have both beneficial and negative effects to native plant communities, including sensitive plants. The beneficial effects would be the restoration of habitat that is currently roadbed and the maintenance and restoration of the more open canopy of dry forest stands. Negative effects could result from conditions created by project activities that favor the invasion and spread of invasive plants. Design features requiring the treatment and monitoring of known invasive plant species and disturbed areas will help prevent adverse effects. This project, with design features, is consistent direction for native plant communities and invasive plants in the Wenatchee Forest plan, as amended, and federal and Washington state law.

References Cited

Ranne, B.M. 2021. Botany Biological Evaluation for the mad Roaring Mills Project. Project record, Entiat Ranger District.

USDA 1999. The Wenatchee Forest Plan.

USDA 2001. Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines.

USDA 2005. Region 6 Invasive Plant Management ROD (2005).